

B=carbohydrate, or carbohydrate and tumor peptidic marker  
T=T, CD4<sup>+</sup> epitope  
K=lysine

a=B4-T4-M  
b=B8-T8-M  
c=B2-T2-M  
d=B4-T4-M(different organization of T-B epitope)

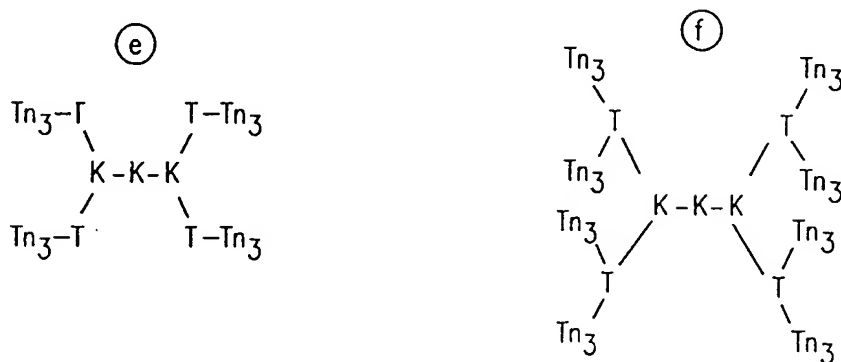
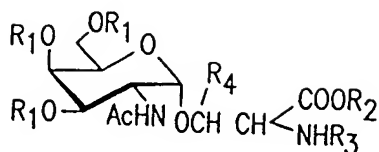
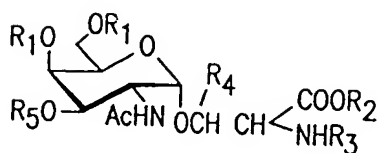


FIG. 1



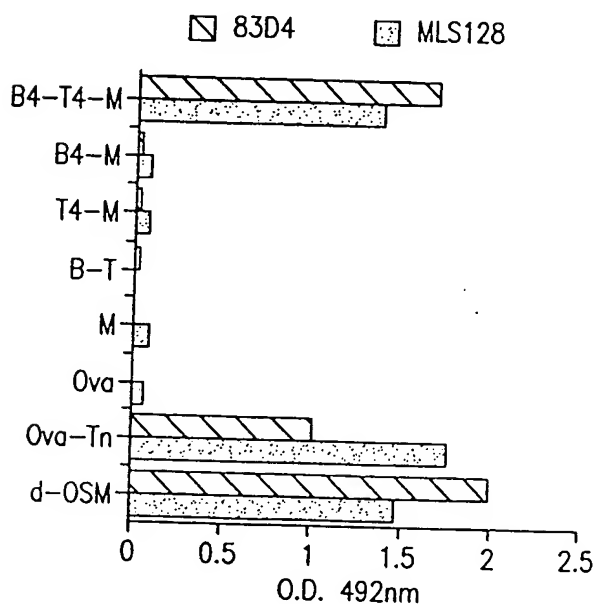
- 1:  $R_1=Ac$ ,  $R_2=t-Bu$ ,  $R_3=Fmoc$ ,  $R_4=H$  or  $CH_3$   
 2:  $R_1=R_2=H$ ,  $R_3=Fmoc$ ,  $R_4=H$  or  $CH_3$   
 3:  $R_1=R_2=R_3=H$ ,  $R_4=H$  or  $CH_3$

**FIG. 2a**



- 1:  $R_1=Ac$ ,  $R_2=t-Bu$ ,  $R_3=Fmoc$ ,  $R_4=H$  or  $CH_3$   
 $R_5=SUGAR$  MOIETY  
 2:  $R_1=R_2=H$ ,  $R_3=Fmoc$ ,  $R_4=H$  or  $CH_3$   
 $R_5=SUGAR$  MOIETY  
 3:  $R_1=R_2=R_3=H$ ,  $R_4=H$  or  $CH_3$   
 $R_5=SUGAR$  MOIETY

**FIG. 2b**



**FIG. 3**

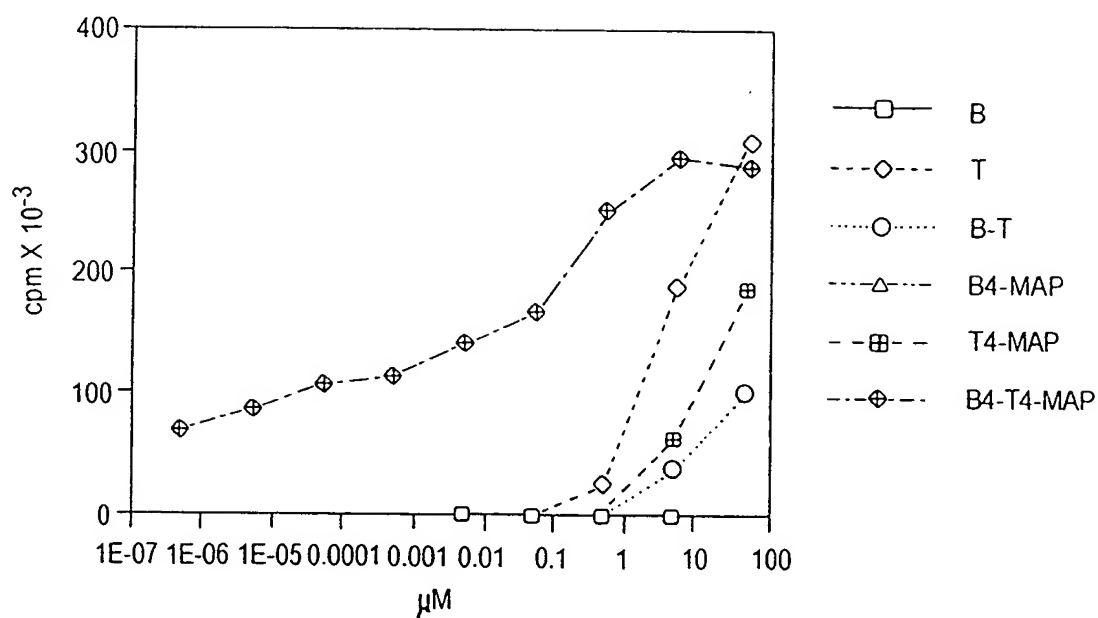


FIG. 4a

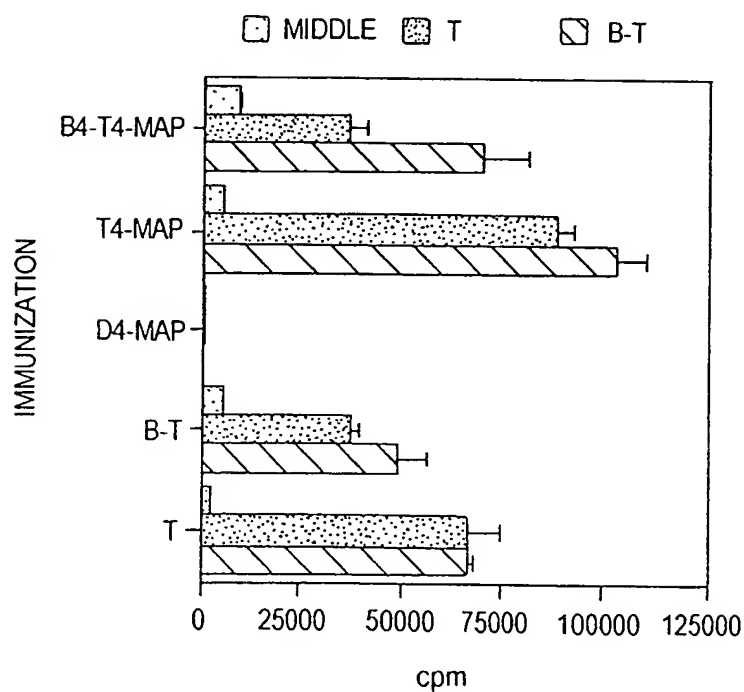
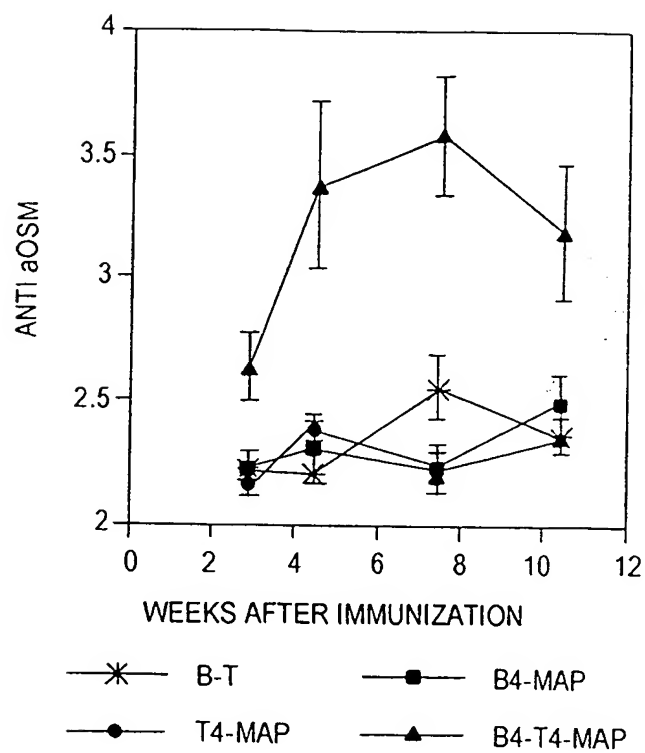
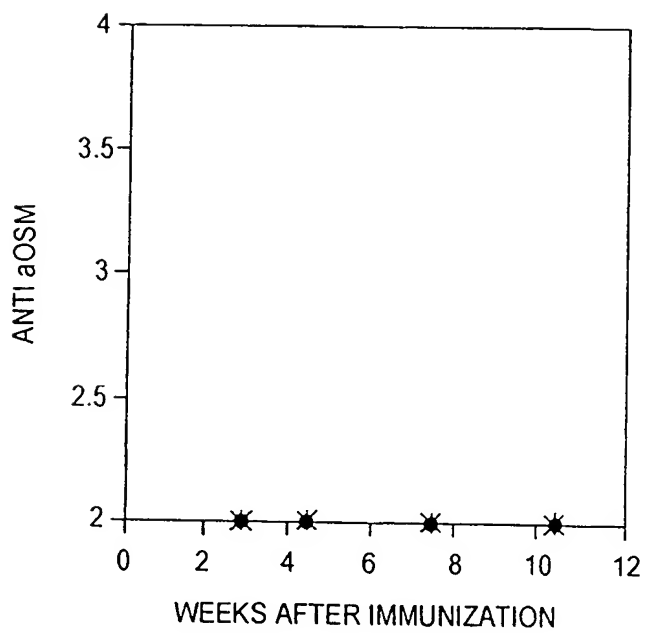


FIG. 4b



**FIG. 5a**



**FIG. 5b**

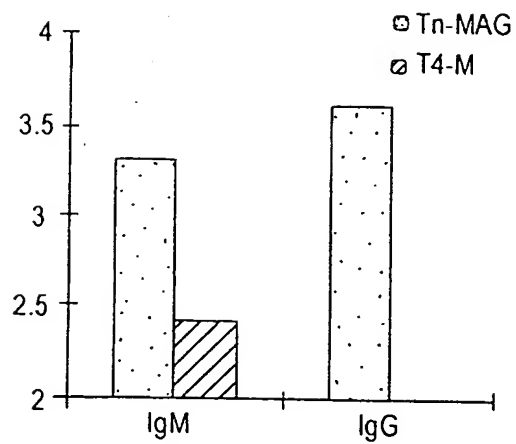


FIG. 5c

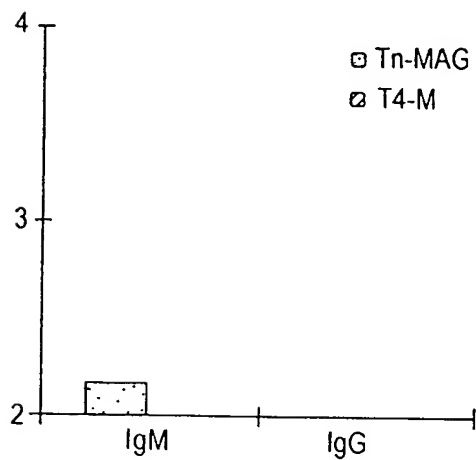


FIG. 5d

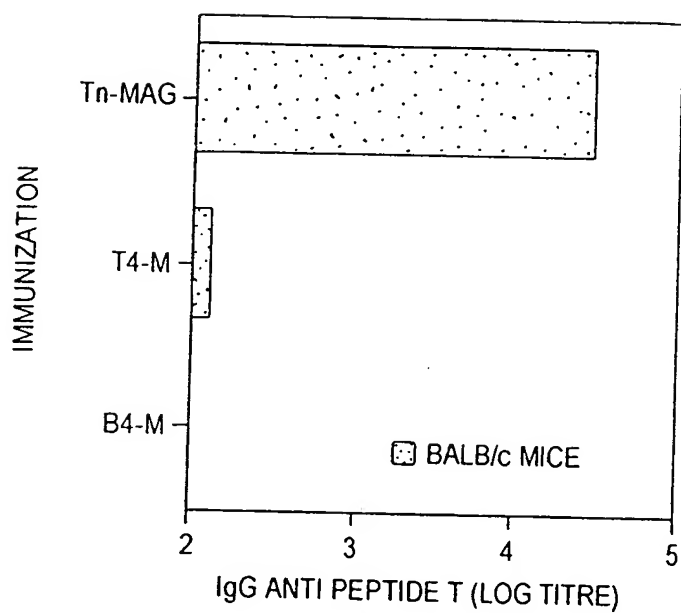


FIG. 6

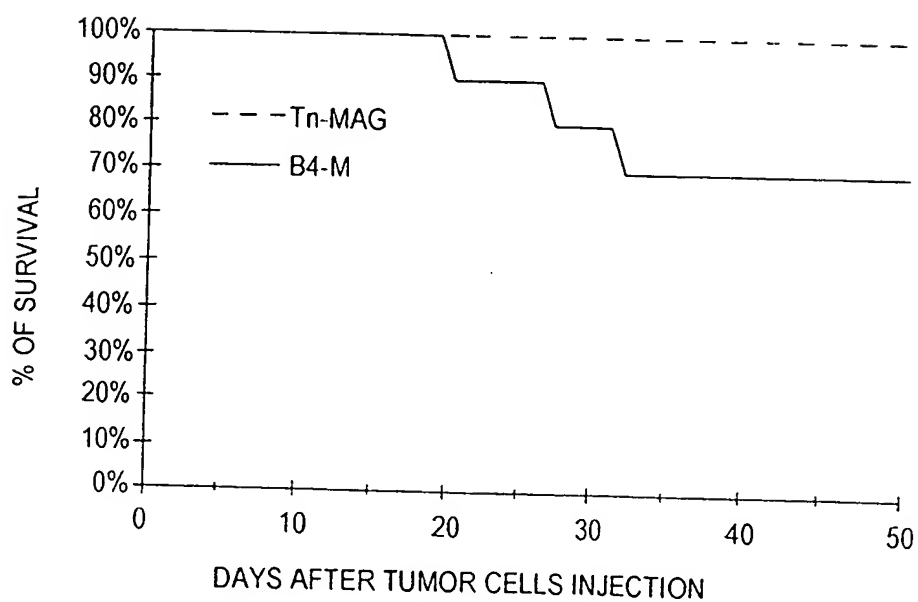
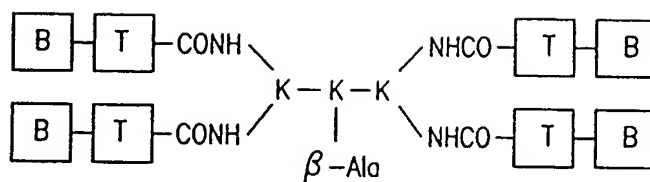
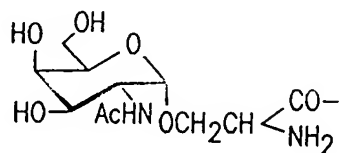


FIG. 7



MAG:Tn-PV

**B** = Tn antigen  
*saccharidic*



**T** = PV epitope  
*peptidic*

KLFAVWKITYKDT (SEQ. ID NO. 4)

**FIG. 8**

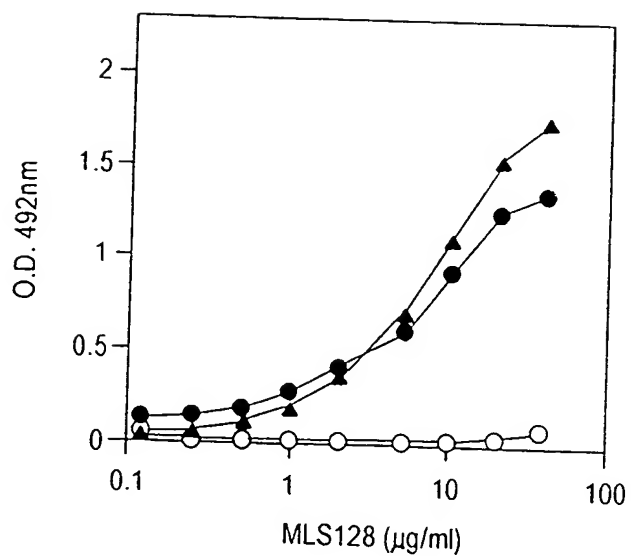


FIG. 9a

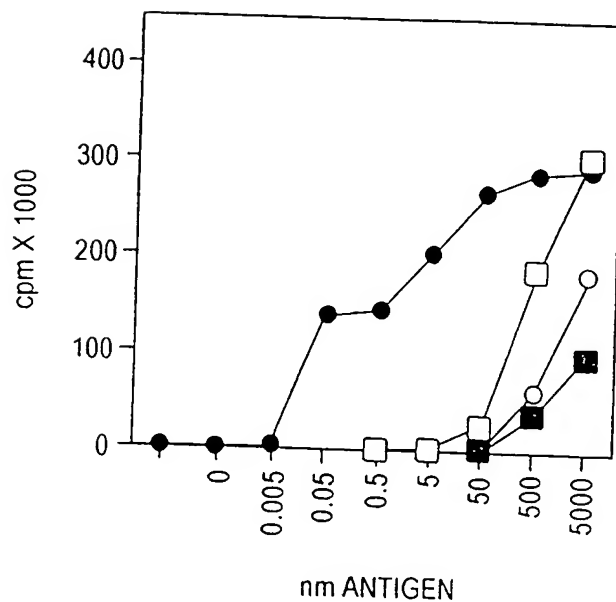


FIG. 9b



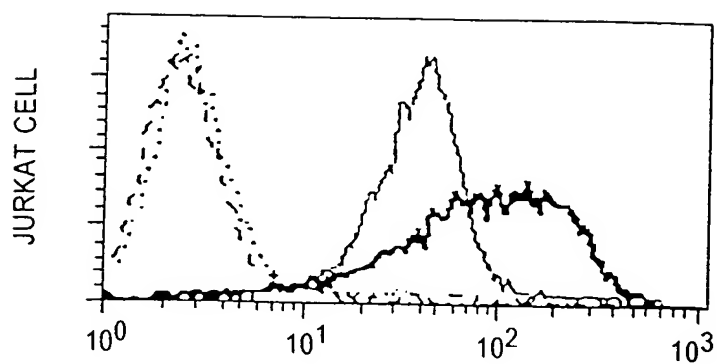


FIG. 10a

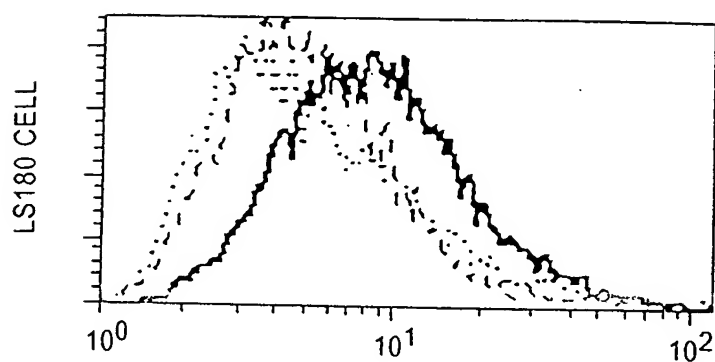


FIG. 10b

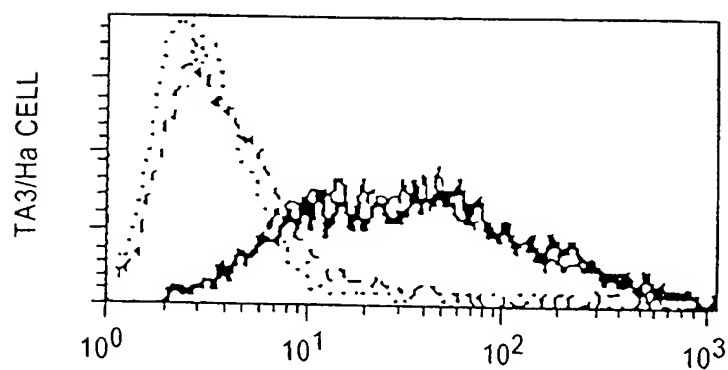


FIG. 10c

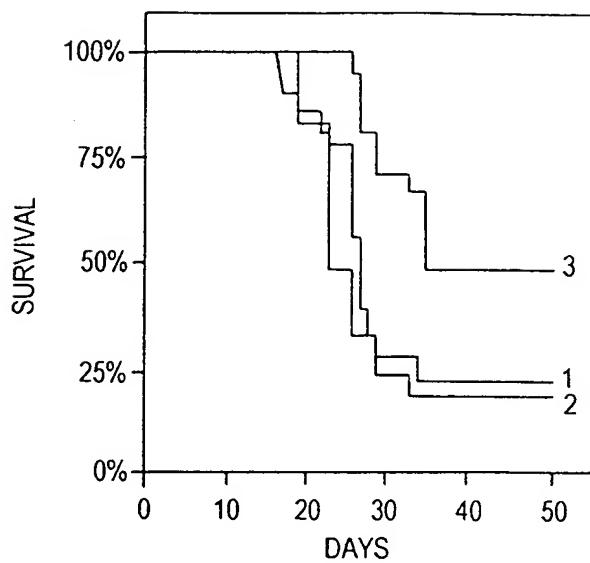


FIG. 11

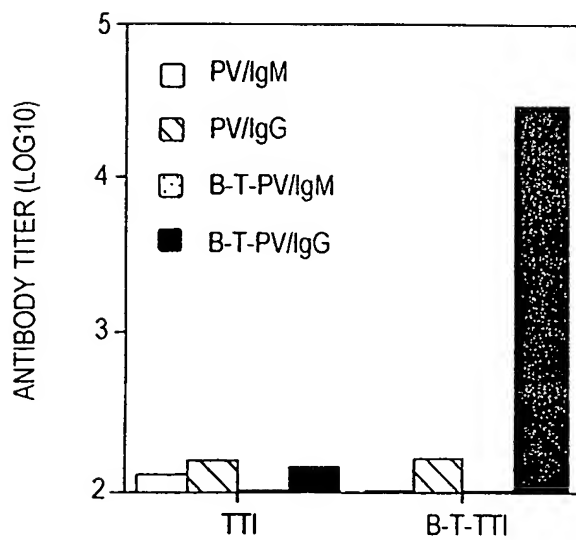


FIG. 12a

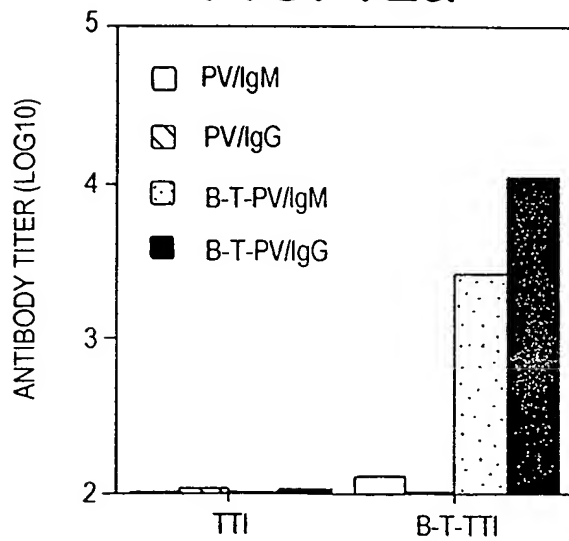
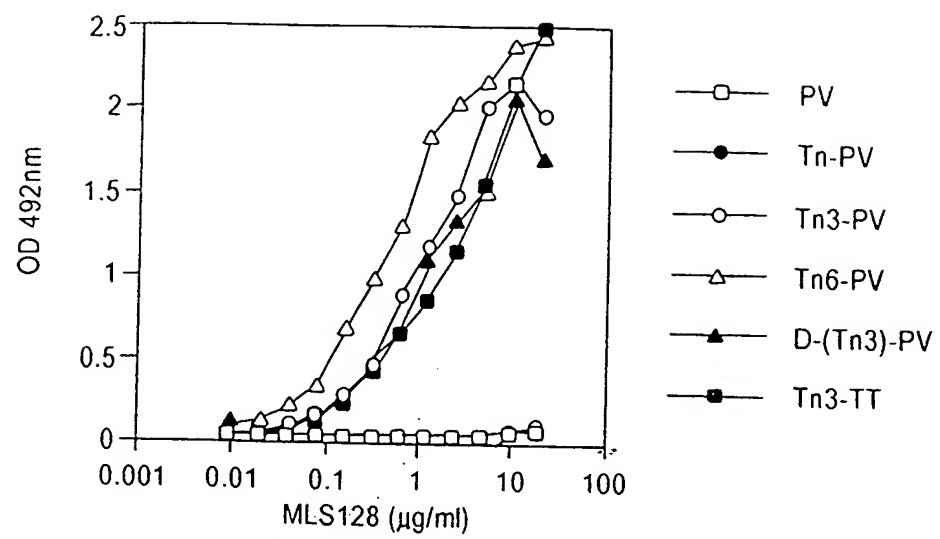
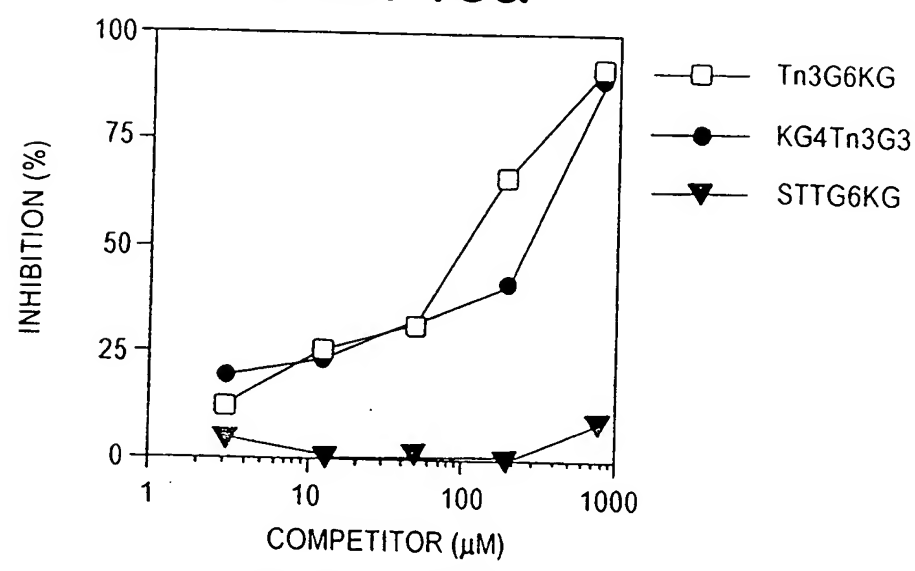


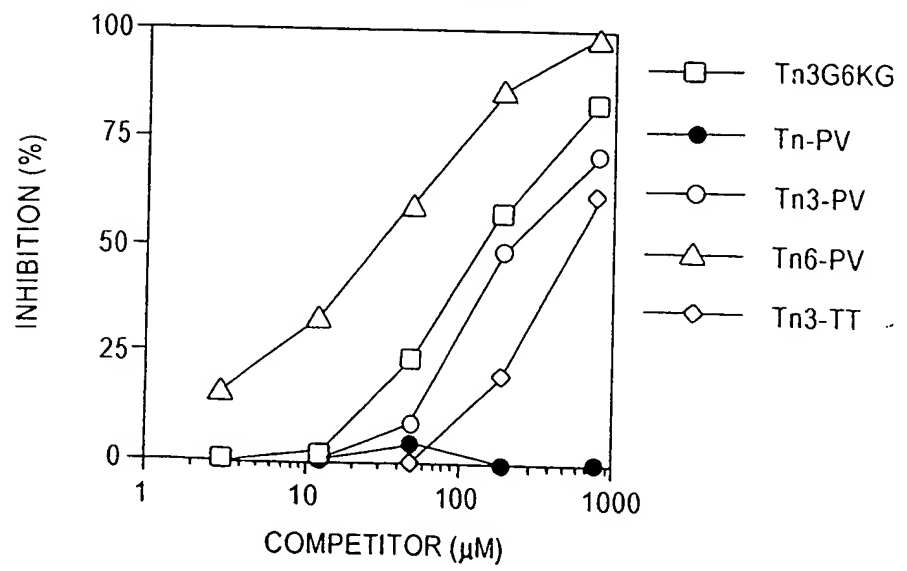
FIG. 12b



**FIG. 13a**



**FIG. 13b**



**FIG. 13c**

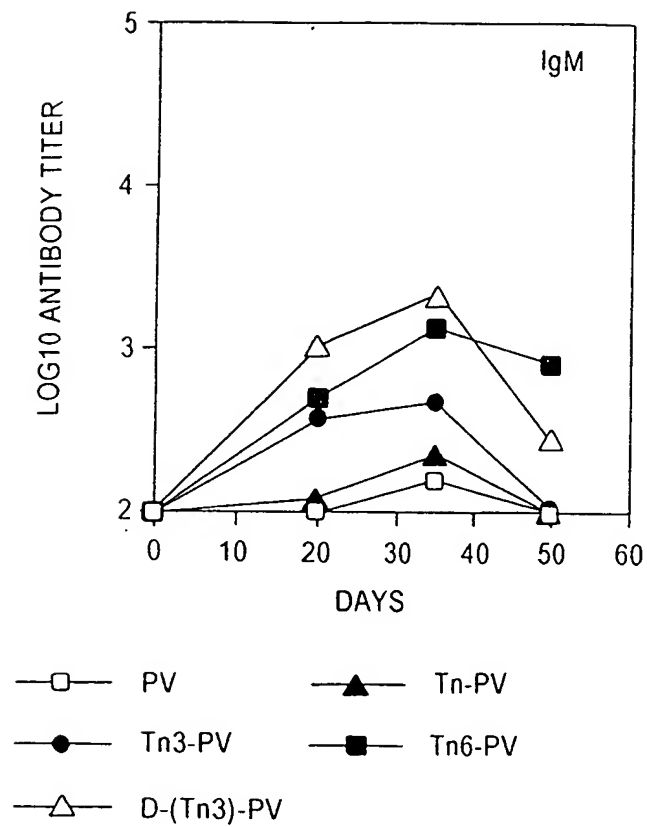


FIG. 14a

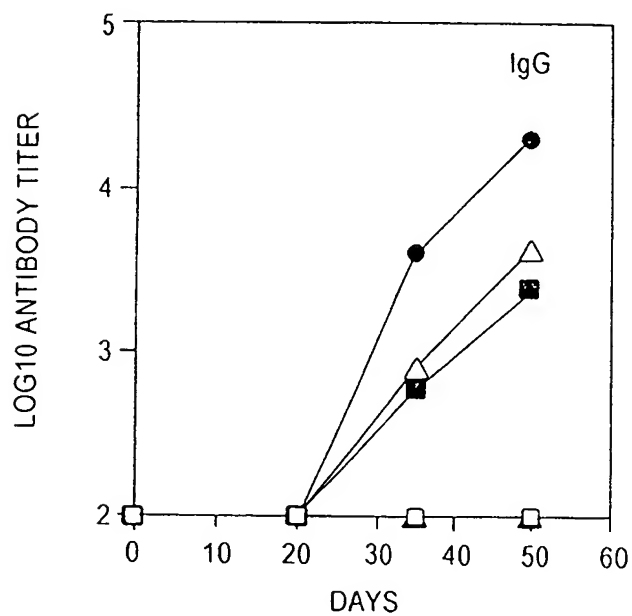


FIG. 14b

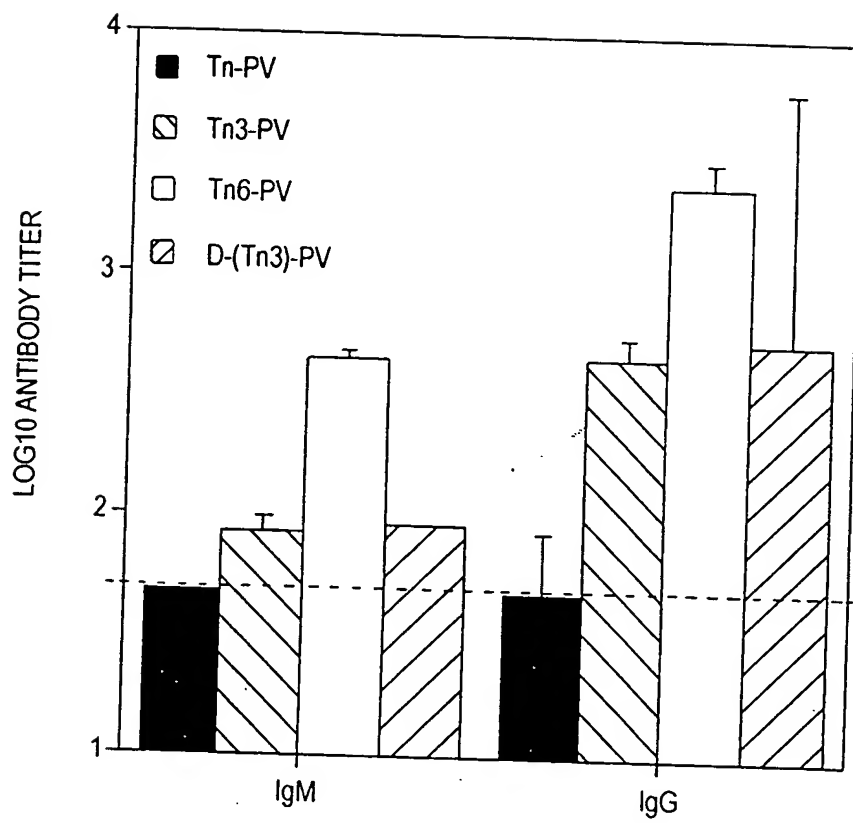
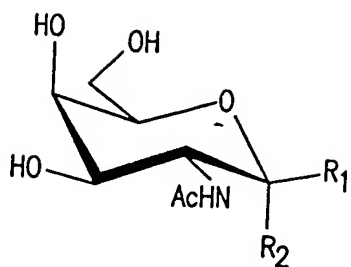
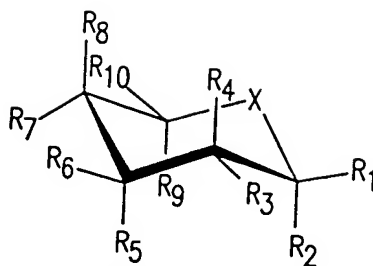


FIG. 15



Tn antigen  
 $R_1=H, R_2=O\text{-Ser or } O\text{-Thr or OH}$   
 $R_1=O\text{-Ser or } O\text{-Thr or OH}, R_2=H$



Tn antigen derivatives  
 $X=O, S, CH_2, NH$   
 $R_1, R_2=H, OR, SR, CH_2R$   
 $R_3-10=H, OH, NHAc, CH_2OH, CH_3$   
 $R=\text{carbohydrate residue, linker, amino-acid}$

FIG. 16

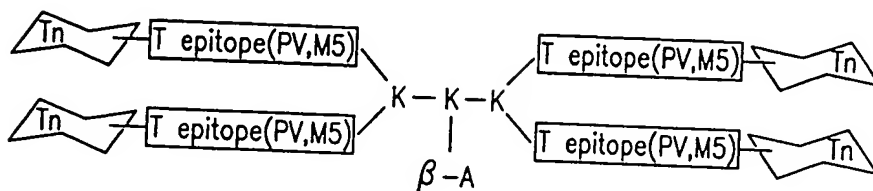


FIG. 17a

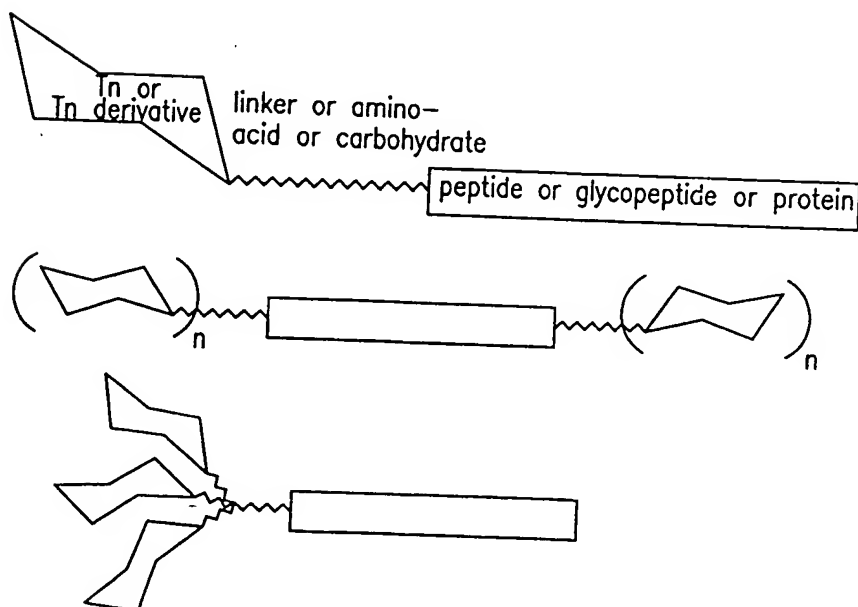


FIG. 17b

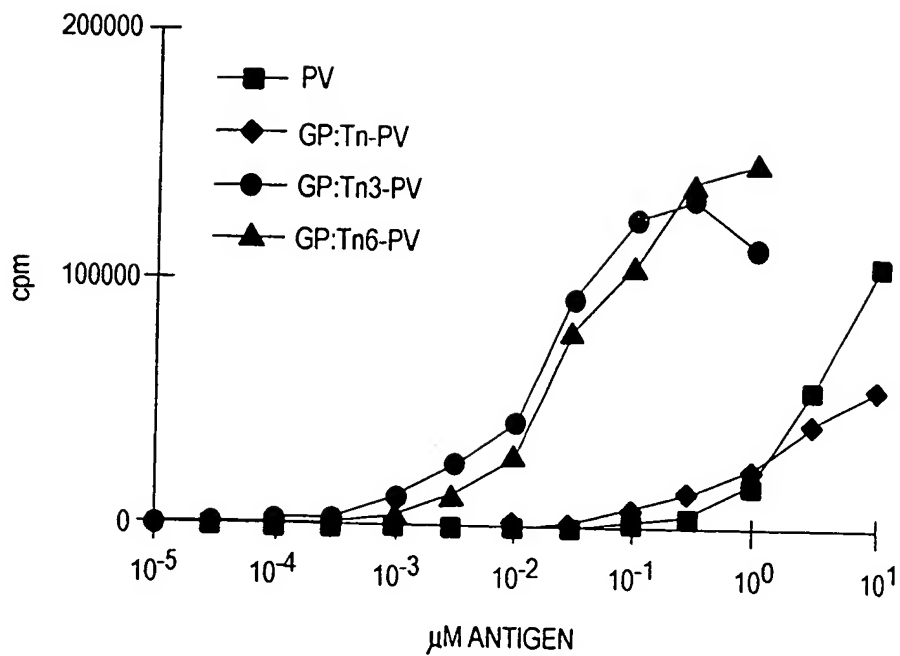


FIG. 18a

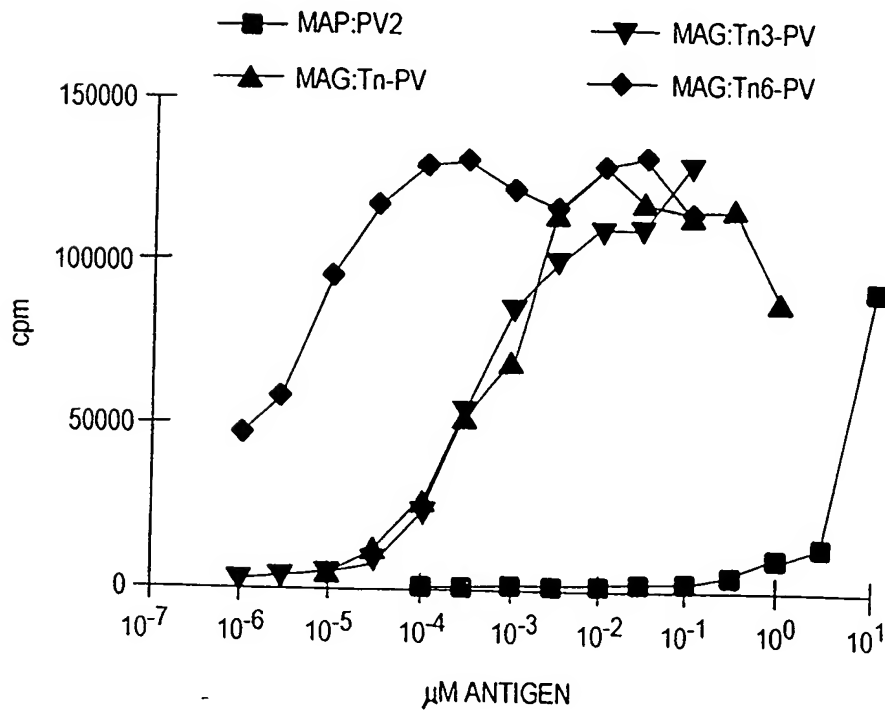


FIG. 18b

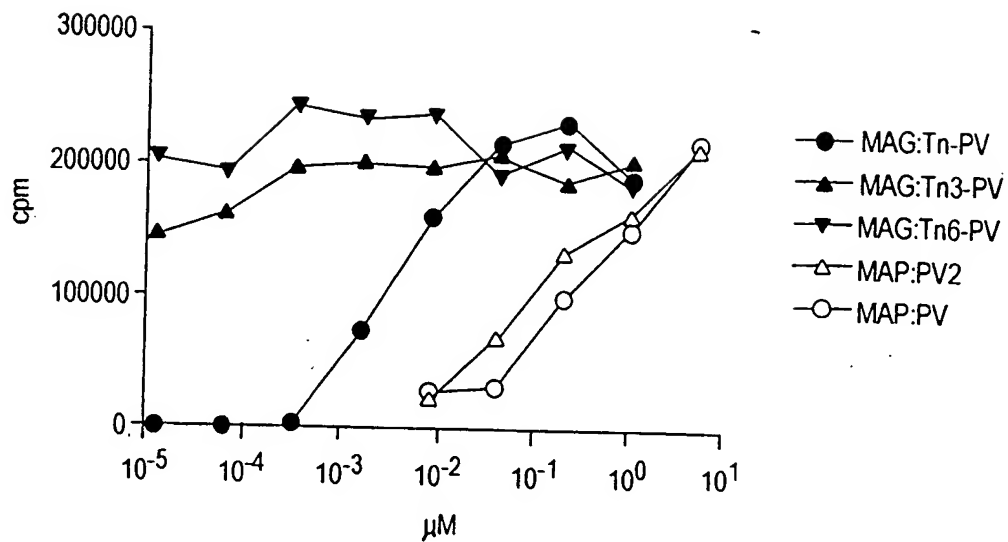


FIG. 19a

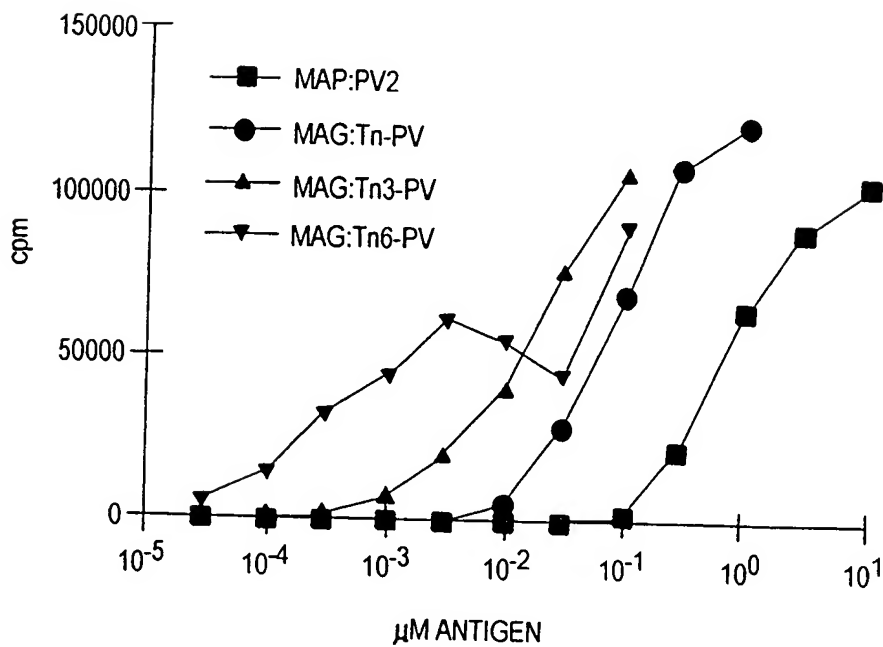


FIG. 19b



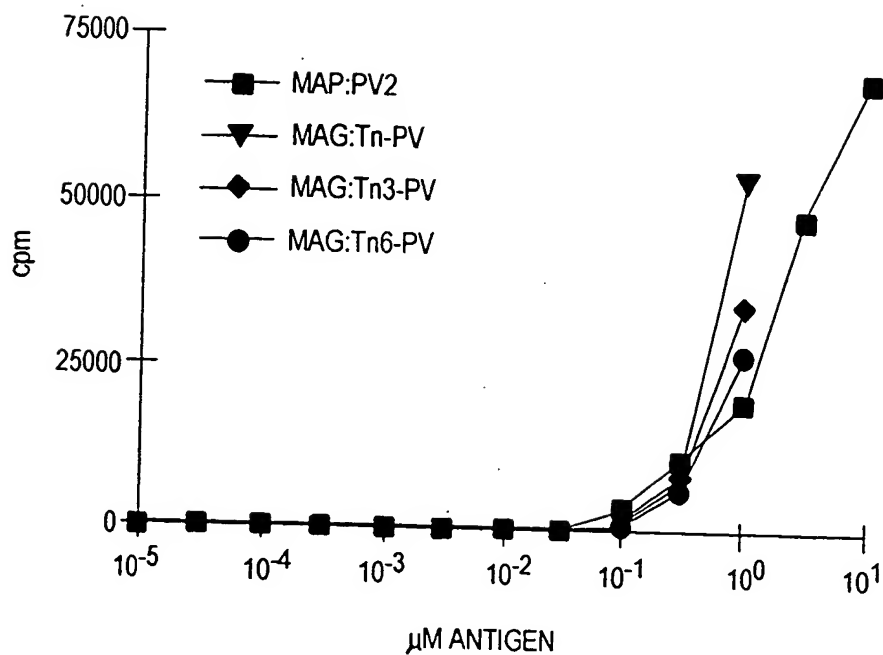


FIG. 20

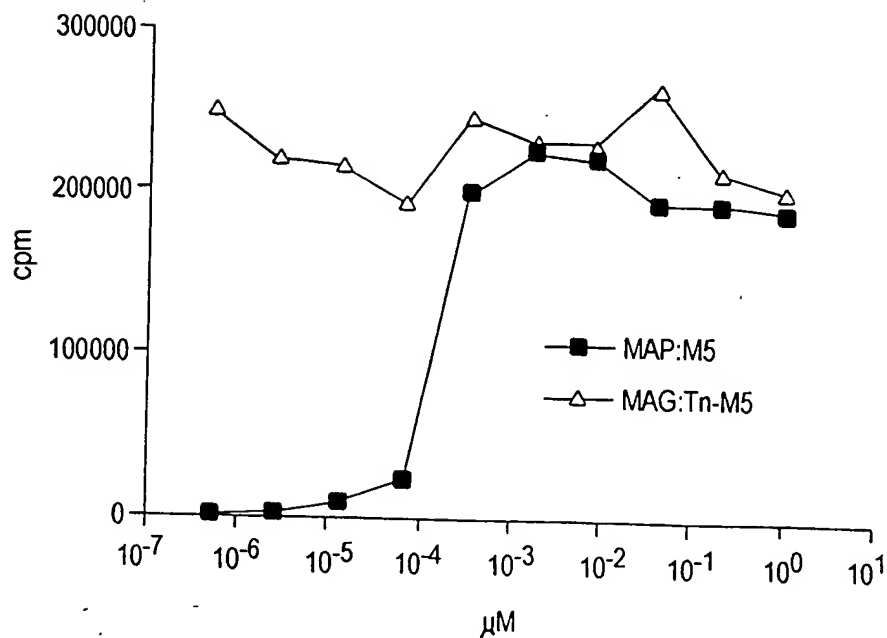


FIG. 21

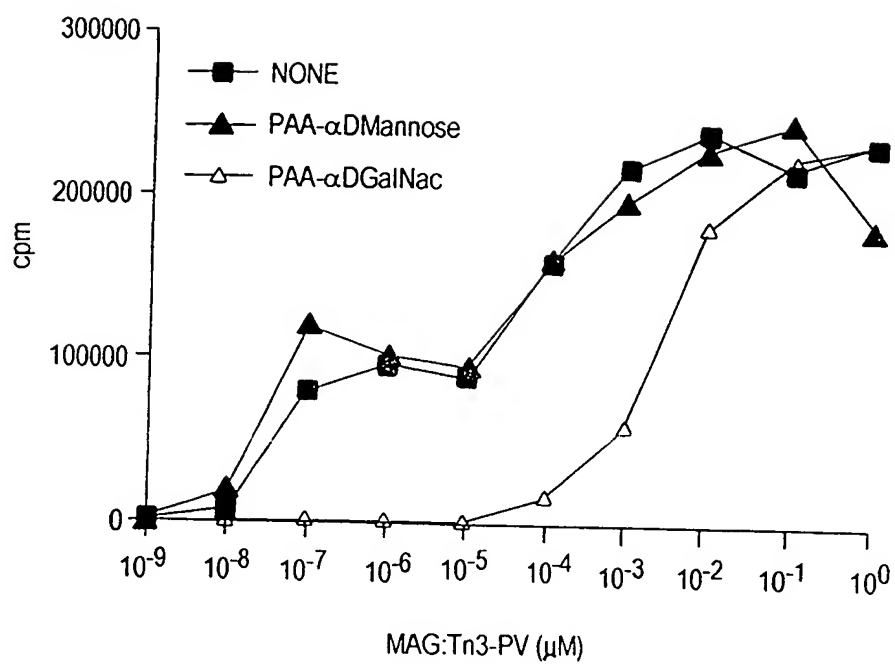


FIG. 22